6. Troubleshooting

6-1 Items to be checked first

1. The input voltage should be rating voltage ±10% range.
   The airconditioner may not operate properly if the voltage is out of this range.

2. Is the link cable linking the indoor unit and the outdoor unit linked properly?
   The indoor unit and the outdoor unit shall be linked by 4 wires.
   2 wires are for power and other 2 wires are for communication, total 4 wires on each indoor unit. Check the terminals if the indoor unit and outdoor unit are properly linked by the same number of cables and if connecting position on the terminal is correct. Otherwise the airconditioner may not operate properly.

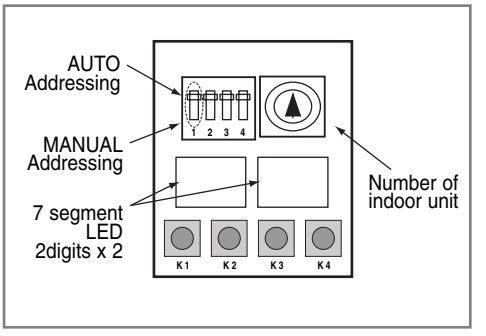
3. When a problem occurs due to the contents illustrated in the table below it is a symptom not related to the malfunction of the airconditioner.

No	Operation of air conditioner	Explanation
1	In a COOL operation mode, the compressor does not operate at a room temperature higher than the setting temperature that the INDOOR FAN should operate. In a HEAT operation mode, the compressor does not operate at a room temperature lower than the setting temperature that indoor fan should operate.	In happens after a delay of 3 minutes when the compressor is reoperated. The same phenomenon occurs when a power is on. As a phenomenon that the compressor is reoperated after a delay of 3 minutes, the indoor fan is adjusted automatically with reference to a temperature of the air blew
2	Fan speed setting is not allowed in AUTO(Auto) or DRY( ) mode.	The speed of the indoor fan is set to LL in DRY mode. Fan speed is 5 steps and is selected automatically in AUTO mode.
3	Compressor stops operation intermittently in DRY( ) mode.	Compressor operation is controlled automatically in DRY mode depending on the room temperature and humidity.
4	Compressor of the outdoor unit is operating although it is turned off in a HEAT mode.	When the unit is turned off while de-ice is activated, the compressor continues operation for up to 12 minutes (maximum) until the deice is completed.
5	Timer LED( ) only of the indoor unit lights up and the air conditioner does not operate.	Timer is being activated and the unit is in ready mode. The unit operates normally if the timer operation is cancelled.
6	The compressor and indoor fan stop intermittently in HEAT mode.	The compressor and indoor fan stop intermittently if room temperature exceeds a setting temperature in order to protect the compressor from overheated air in a HEAT mode.
7	Indoor fan and outdoor fan stop operation intermittently in a HEAT mode.	The compressor operates in a reverse cycle to remove exterior ice in a HEAT mode, and indoor fan and outdoor fan do not operate intermittently for within 20% of the total heater operation.
8	The compressor stops intermittently in a COOL mode or DRY mode, and fan speed of the indoor unit decreases.	The compressor stops intermittently or the fan speed of the indoor unit decreases to prevent inside/outside air frozen depending on the inside/outside air temperature.

6-2 Checking and Testing operations

To complete the installation, perform the following checks and tests to ensure that the air conditioner is operating correctly.

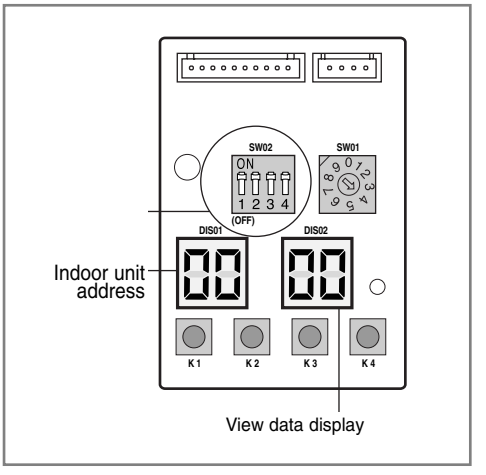
1. Review all the following elements in the installation:
   - Installation site strength
   - Piping connection tightness not to leak any gas
   - Connection wiring
   - Heat-resistant insulation of the piping
   - Drainage
   - Earthing wire connection
   - Setting number of the indoor unit installed (Outdoor unit SW)
   - Addressing mode (AUTO or MANUAL)
   - Address number on each indoor unit (Manual addressing mode)
   - Correct operation for checking connection (follow the step below)



■ **Key Options of PCB Display**

- K1 : Test button - K2 : Function button
- K3 : Reset button - K4 : View mode change button

Key / Push	K1	K2	K3	K4
1	Heat mode Try-run (Display: H1)	Refrigerant Charging (Display: H2)	Reset	View mode change
2	-	Cool mode Try-run (Display: H3)		
3	-	Pump down (Display: H4)		
4	-	Checking of pipe connection (Display: H5)		



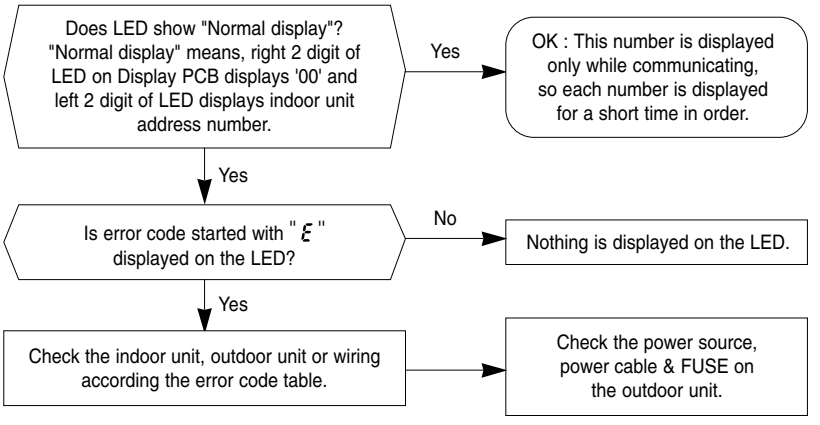
Outdoor PCB Display

■ **K4 View mode Display changes**

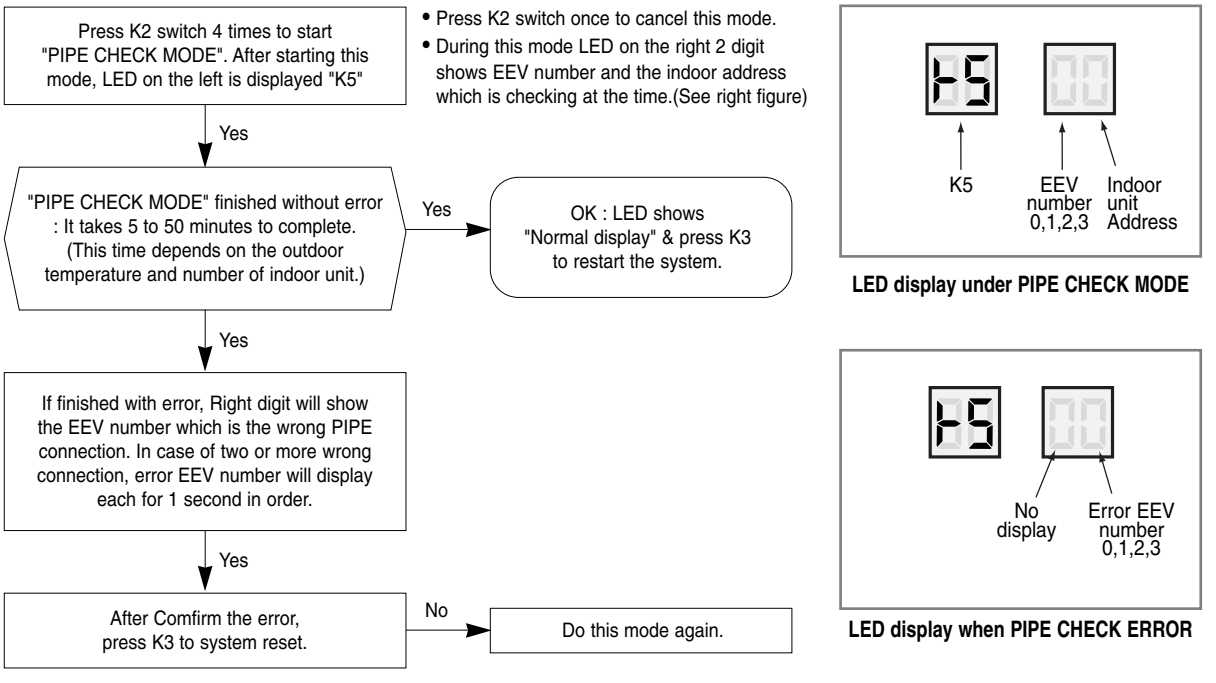
Push	Display Explanation		Push	Display Explanation
0	Present Compressor Frequency		8	Discharge temperature
1	Target Compressor Frequency		9	OLP temperature
2	Order Compressor Frequency		10	Condenser temperature
3	EEV0 current step		11	Outdoor temperature
4	EEV1 current step		12	Primary current
5	EEV2 current step	MH18VP2X/MH19VP2X/MH052FXEA2 Always Zero	13	Target Discharge temperature
6	EEV3 current step		14	Total capacity of the indoor units
7	Fan RPM (H: high, L: low, Blank: off)		15	Safety control code

2. Apply the power to the outdoor unit

Outdoor unit will try to communicate the specified number of indoor units bySW01onoutdoordisplayPCB.



■ **In case of AUTO ADDRESSING mode (SW2-1:ON)**



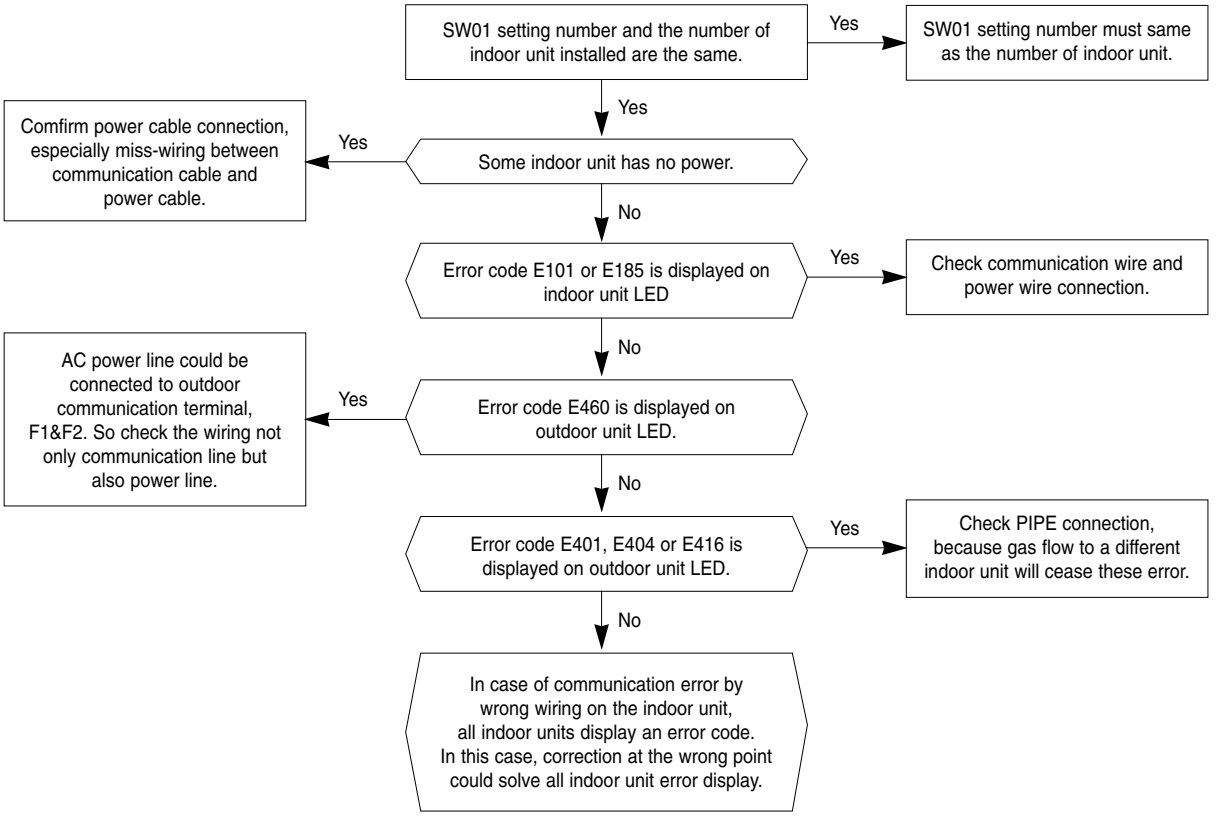
- This mode is for finding the combination between indoor unit and each valve on the outdoor unit. Because refrigerant flow is controlled with EEV in the outdoor,controller should know which EEV will control which indoor unit.
- Once "PIPE CHECK MODE"is done normally,each indoor unit will remember the given address number by the outdoor unit and no need to do this checking. But in case of listed below,PIPE CHECK MODE should be done again.
  - Re-install the system (ie.house moving)
  - Remove indoor unit,Add new indoor unit,Change indoor PCB for repair.
  - Mode change from "manual addressing"to "auto addressing"
- On this mode the controller will ignore the manual address number set on the rotary switch on the indoor PCB.
- To confirm the indoor address number assigned by this mode,use "TEST MODE"and the address number will be displayed on the LED display on the indoor unit.

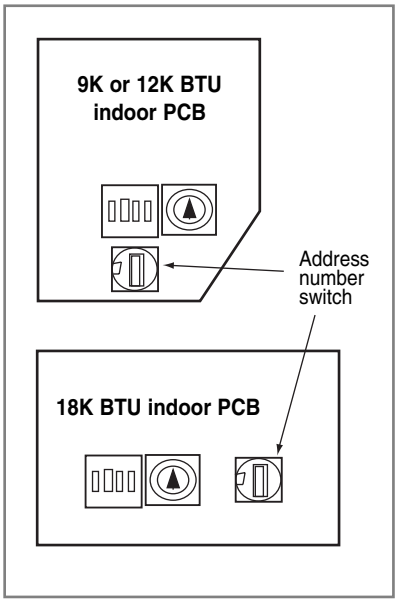
■ **In case of MANUAL ADDRESSING mode. (SW02-1:OFF)**

Checking the address number correctly on each indoor unit PCB.

- "PIPE CHECK MODE" is also able to use.

● **If Error code is displayed on indoor or outdoor LED, check as follows;**





The error indicated on the PCB display of outdoor unit

Display		Explanation	Main checking Point
E1	01	Communication error (indoor unable to receive data)	Communication cable connection
E1	02	Communication error (outdoor unable to communicate)	Indoor unit
E1	21	Indoor unit room temperature sensor error (Open/Short)	Indoor unit
E1	22	Indoor unit heat exchanger in temperature sensor error (Open/Short)	Indoor unit
E1	23	Indoor unit heat exchanger out temperature sensor error (Open/Short)	Indoor unit
E1	28	Indoor unit sensor error - Evaporator pipe in sensor detached	Indoor unit
E1	29	Indoor unit sensor error - Evaporator pipe out sensor detached	Indoor unit
E1	30	Indoor unit heat exchanger in & out temperature sensor detached	Indoor unit
E1	61	More than 2 indoor units cool and heat simultaneously	Indoor unit operation mode
E2	01	The number of indoor unit mismatched	Communication wiring
E2	02	Communication error (outdoor unable to receive data)	Communication wiring
E2	03	Communication error between 2 microcontroller on the outdoor PCB	Outdoor unit PCB
E2	21	Outdoor temperature sensor error (Short/Open) - Error level : over 4.9V(-50˚C) under 0.4V(93˚C)	Temperature sensor
E2	37	Condenser temperature sensor error (Short/Open) - Error level : over 4.9V(-50˚C) under 0.4V(93˚C)	Temperature sensor
E2	46	Condenser temperature sensor detached	Temperature sensor
E2	60	Compressor discharge sensor error (Short/Open) - Error check condition : outdoor temperature over -20˚C - Error level : over 4.95V(-30˚C) under 0.5V(151˚C)	Temperature sensor
E2	61	Compressor discharge sensor detached	Temperature sensor
E3	20	Compressor OLP sensor error (Short/Open) - Error check condition : outdoor temperature over -20˚C - Error level : over 4.95V(-30˚C) under 0.5V(151˚C)	Temperature sensor
E4	01	Indoor unit heat exchanger freezing and compressor stop (cooling mode)	Check pipe matching also(indoor-outdoor)
E4	04	Outdoor unit overload and compressor stop (protection control in heating mode)	Check pipe matching also(indoor-outdoor)
E4	16	Outdoor unit high discharge temperature and compressor stop (protection control in heating mode)	Check pipe matching also(indoor-outdoor)

The error indicated on the PCB display of outdoor unit(cont.)

Display		Explanation	Main checking Point
E4	19	Outdoor unit EEV open error (self diagnosis)	EEV
E4	22	Outdoor unit EEV close error (self diagnosis)	EEV
E4	40	High temperature (over 30˚C) of outdoor as heating mode	Operation mode
E4	41	Low temperature (under -5˚C) of indoor as cooling mode	Operation mode
E4	60	Wrong connection between communication and power cable	Wiring indoor and outdoor
E4	61	Inverter compressor starting failure (5 times)	Service valve, EEV, Compressor terminal, Compressor wire, Outdoor controller
E4	62	Compressor trip by input current limit control	EEV, Gas over charge, Outdoor controller
E4	63	Compressor trip by OLP temperature limit control	Outdoor fan, Compressor, Outdoor controller
E4	64	Compressor peak current protection	Outdoor fan, Compressor, Compressor wire, Outdoor controller
E4	65	Compressor overload protection by current	Outdoor fan, EEV, Service valve, Outdoor controller
E4	66	DC-link voltage error (under 150V or over 410V) (This error might display for a few seconds after power cut)	Power voltage, Outdoor controller
E4	67	Compressor rotation error	Compressor terminal, Compressor wire, Outdoor controller
E4	68	Current sensor error	Outdoor controller
E4	69	DC-link voltage sensor error	Outdoor controller
E4	70	Compressor overload protection	Outdoor fan, EEV, Service valve, Outdoor controller
E4	71	EEPROM error	Outdoor controller
E4	72	AC line zero-crossing detection circuit error	Outdoor controller, Terminal Block
E5	54	NO GAS error (self diagnosis)	Piping (gas leak)

The error indicated on the LED display of Indoor unit

■ MH020FPEA / MH023FPEA / MH026FPEA / MH035FPEA / MH052FPEA / MH18VP2-09 / MH19VP2-07 / MH19VP2-12

Display	Explanation	Main checking Point / Remark
E1↔01	Communication error (unable to receive data)	Communication cable connection
E1↔02	Communication error (outdoor cannot communicate)	Another indoor unit or indoor PCB
E1↔21	Indoor unit room temperature sensor error (Open/Short)	Room temperature sensor, indoor PCB
E1↔22	Indoor unit heat exchanger in temperature sensor error (Open/Short)	Heat exchanger in sensor, indoor PCB
E1↔23	Indoor unit heat exchanger out temperature sensor error (Open/Short)	Heat exchanger out sensor, indoor PCB
E1↔28	Indoor unit heat exchanger in temperature sensor detached	Heat exchanger in sensor
E1↔29	Indoor unit heat exchanger out temperature sensor detached	Heat exchanger out sensor
E1↔30	Indoor unit heat exchanger in & out temperature sensor detached	Heat exchanger in & out sensor
E1↔54	Indoor unit fan motor malfunction	Fan motor and cable
E1↔61	More than 2 indoor units cool and heat simultaneously	Another indoor unit operation mode
E1↔62	EEPROM error	Indoor PCB
E1↔63	Option code setting error	Option code
E1↔85	Cable miss-wiring	Cable connection (Indoor & Outdoor unit)
E2↔01	The number of indoor unit mismatched	Cable connection (another indoor unit & outdoor unit), SW01(outdoor)
E5↔59	Outdoor unit error	Outdoor unit (Error code)

The error indicated on the LED display of Indoor unit

■ **MH026FKEA / MH035FKEA**

Abnormal conditions	Indicators					Operating
	Green	Red				
Power reset	◑	×	×	×	×	
Error of temperature sensor in indoor unit (OPEN/SHORT)	×	×	◑	×	×	
Error of heat exchanger sensor in indoor unit Error of heat exchanger OUT sensor in indoor unit Error of outlet temperature sensor in indoor unit (OPEN/SHORT): For heat pump models only	◑	×	◑	×	×	
Error of mixed operation	×	◑	×	◑	×	
Error of indoor fan motor : Below 450RPM for 15 minutes	×	×	×	◑	×	
Error of outdoor temperature sensor Error of COND sensor Error of DISCHARGE sensor	◑	×	×	◑	×	
1. No communication for 2 minutes between indoor unit and outdoor unit (communication error for more than 2 minutes) 2. Indoor unit receiving the communication error from outdoor unit 3. Outdoor unit tracking 3 minutes error 4. When sending the communication error from outdoor unit due to the mismatching of the communication numbers and installed numbers after completion of tracking (communication error for more than 2 minutes)	×	×	◑	◑	×	Error of indoor unit: Displayed on the indoor unit regardless of operation
1. 2nd detection of refrigerant completely leak 2. 2nd detection of high temperature COND 3. 2nd detection of high temperature DISCHARGE 4. Compressor down due to 6th detection of freezing	×	×	◑	◑	◑	Displayed on appropriate indoor unit which is operating Displayed on outdoor unit
Error of float switch	×	×	×	◑	◑	
Error of setting option switches for optional accessories	×	×	◑	×	◑	
EEPROM error	◑	×	◑	◑	×	
EEPROM option error	◑	◑	◑	◑	◑	

● : On ◑ : Flickering × : Off

◆ If you turn off the air conditioner when the LED is flickering, the LED is also turned off.

The error indicated on the LED display of Indoor unit

■ MH052FDEA

Abnormal conditions	Indicators					Operating
	Concealed Type					
	Blue	Red				
	Standard Type					
	⏻		⏱		▦	
Power reset	◑	×	×	×	×	
Error of temperature sensor in indoor unit (OPEN/SHORT)	×	×	◑	×	×	Displayed on appropriate indoor unit which is operating
Error of heat exchanger sensor in indoor unit Error of heat exchanger OUT sensor in indoor unit Error of outlet temperature sensor in indoor unit (OPEN/SHORT): For heat pump models only	◑	×	◑	×	×	Displayed on appropriate indoor unit which is operating
Error of mixed operation	×	◑	×	◑	×	
Error of outdoor temperature sensor Error of COND sensor Error of DISCHARGE sensor	◑	×	×	◑	×	Displayed on appropriate indoor unit which is operating Displayed on outdoor unit
1. No communication for 2 minutes between indoor unit and outdoor unit (communication error for more than 2 minutes) 2. Indoor unit receiving the communication error from outdoor unit 3. Outdoor unit tracking 3 minutes error 4. When sending the communication error from outdoor unit the mismatching of the communication numbers and installed numbers after completion of tracking. (communication error for more than 2 minutes)	×	×	◑	◑	×	1. Error of indoor unit : Displayed on the indoor unit regardless of operation 2. Error of outdoor unit : Displayed on the indoor unit which is operating
Self-diagnostic error (including the indoor unit not detected) 1. Error of electronic expansion valve close 2. Error of electronic expansion valve open 3. Breakaway of EVA OUT sensor 4. Breakaway of EVA IN sensor	×	×	◑	◑	◑	Displayed on appropriate indoor unit which is operating Displayed on outdoor unit

● : On ◑ : Flickering × : Off

◆ If you turn off the air conditioner when the LED is flickering, the LED is also turned off.

◆ If you re-operate the air conditioner, it operates normally at first, then detect an error again.

Abnormal conditions	Indicators					Operating
	Concealed Type					
	Blue	Red				
	Standard Type					
5. Breakaway of COND MID sensor 6. 2nd detection of refrigerant completely leak 7. 2nd detection of high temperature COND 8. 2nd detection of high temperature DISCHARGE 9. COMP DOWN due to 2nd detection of low pressure switch 10. Error of reverse phase 11. Compressor down due to 6th detection of freezing 12. Self-diagnosis of condensation sensor (G8, G9) 13. Compressor down due to condensation ratio control	×	×	◑	◑	◑	Displayed on appropriate indoor unit which is operating Displayed on outdoor unit
Error of float switch	×	×	×	◑	◑	
Error of setting option switches for optional accessories	×	×	◑	×	◑	
EEPROM error	◑	×	◑	◑	×	
EEPROM option error	◑	◑	◑	◑	◑	

● : On ◑ : Flickering × : Off

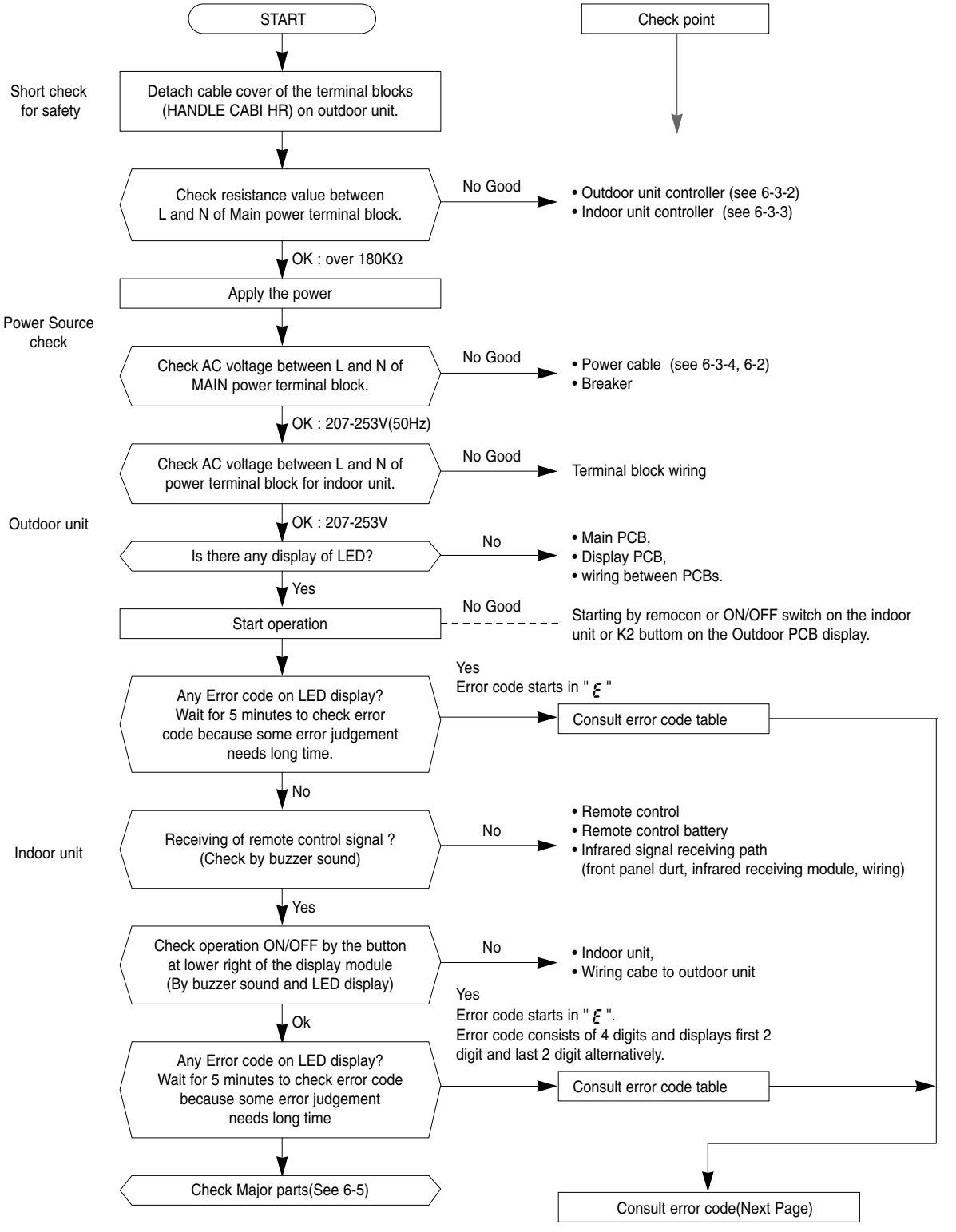
◆ If you turn off the air conditioner when the LED is flickering, the LED is also turned off.

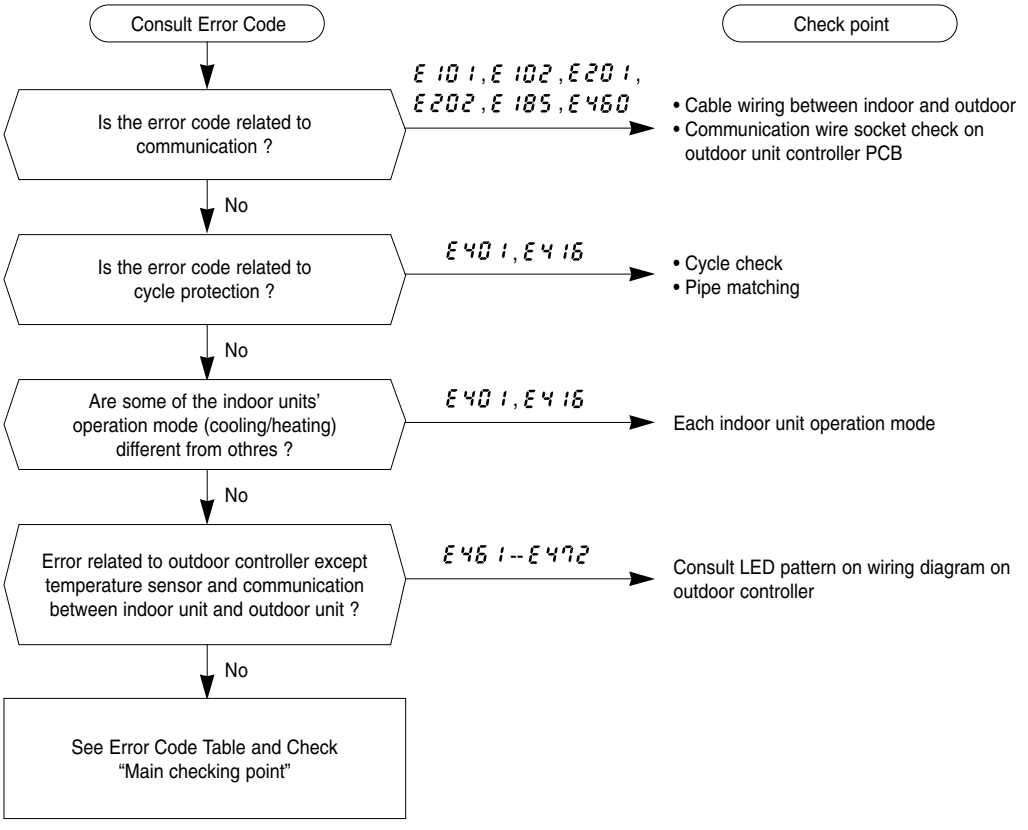
◆ If you re-operate the air conditioner, it operates normally at first, then detect an error again.

6-3 Fault Diagnosis by Symptom

6-3-1 Basic Check Flow

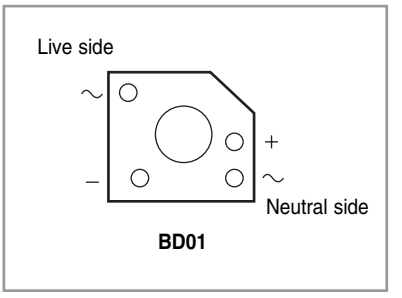
Preparation : multimeter (AC voltage, DC voltage, Resistance)




Consult Error Code
Check point
Is the error code related to communication ?
E101, E102, E201, E202, E185, E460
• Cable wiring between indoor and outdoor
• Communication wire socket check on outdoor unit controller PCB
No
Is the error code related to cycle protection ?
E401, E416
• Cycle check
• Pipe matching
No
Are some of the indoor units' operation mode (cooling/heating) different from othres ?
E401, E416
Each indoor unit operation mode
No
Error related to outdoor controller except temperature sensor and communication between indoor unit and outdoor unit ?
E461--E472
Consult LED pattern on wiring diagram on outdoor controller
No
See Error Code Table and Check "Main checking point"

6-3-2 Checking Outdoor Controller

1. Making sure the wire connections.



2. Checking AC line
   1) Checking FUSE
   2) Checking resistance between 'L wire (BRN)' and 'DB01 Live side'
      normal value : 190 - 210Ω
      If value is ∞ then check R001.
   3) Checking resistance between 'N wire (SKYBLU)' and 'DB01 Neutral side'
      normal value : 0 - 0.1Ω

3. Checking ON/OFF pattern of LED1(Red), LED2(Green), LED3(Yellow)
   Apply the power then ALL LEDs are on for about 1 second. then changed to as follow.
   ■ **LED1 (Red)** : ALWAYS ON
   ■ **LED2 (Green)** : Blinking 4 times a second
   (This means communication between 2 micoms IC01 and IC50 is normal)
   ■ **LED3 (Yellow)** : OFF

● **In case of another pattern inverter micom detects some hardware trouble or abnormal condition.**

Yellow	Green	Red	Description	Note
Status indication				
OFF	OFF	OFF	Power OFF / No power (SMPS error)	
ON	ON	ON	Power on reset (1~2 seconds)	If always in this pattern IC01(inverter micom) has some trouble.
OFF	Blink	ON	Normal operation	
Hardware trouble				
OFF	OFF	ON	Communication Error between Main micom and inverter micom	
Blink	Blink	ON	Current sensor error	
ON	Blink	Blink	DC-LINK sensor error	
ON	ON	Blink	AC-Line zero crossing error	After power off this error will display until DC LINK capacitor discharged.(Max 20sec.)
ON	OFF	Blink	Option error (EEPROM error)	
Abnormal condition				
OFF	OFF	Blink	Comp. peak current (Over Current)	
OFF	Blink	OFF	Comp. starting error	
ON	OFF	ON	Comp. rotation error	
OFF	ON	Blink	DC-Link voltage error	
Blink	ON	OFF	Unit Over current protection	

4. Checking Display PCB LED if Error code is displayed.
   See error code table if displayed.

5. Checking DC voltage on each point

Item	Measuring point	Normal value
DC LINK	Q803 E(-)~D101 Cathode (+)	about 1.4 times as much as Power AC Voltage ex) AC220V → 305~310Vdc
inverter 15V	C803 voltage	14.5V~15.5V
Main control 12V	CN59 pin 1~pin 3	12V~15V
Main control 5V	CN59 pin 1~pin 2	4.75V~5.25V

6. Checking PFC
   When Input current is over 3.0A PFC circuit will work to control the harmonics of AC current.
   Checking is measuring DC-LINK voltage.
   PFC ON (Compressor is working) : DC LINK voltage is over 300Vdc (AC line >220V)
   After starting compressor DC Link voltage is going down because of compressor load.
   But in case of 3.0A above , DC link voltage will go up over 300V. This voltage is in proportion to AC input voltage.
   Current can be monitored with "VIEW MODE".
   Press K4 key on the outdoor display PCB for several times to change the display to sensor temperature value.
   Left 1 digit of the LED is data index and Right 3 digits are the value

Index	Value	Remark
C	Estimated Primary current value from Compressor current	The unit is 0.1A

6-3-3 Checking Indoor controller

1. MH020FPEA/MH023FPEA/MH026FPEA/MH035FPEA/MH18VP2-09/MH19VP2-07/MH19VP2-12 PCB
   1) Checking FUSE
      This control PCB has 2 fuses, F701 and F702.
      If F702 is blown PCB circuit has some damage and replace PCB.
   2) Checking DC voltage
      Measure voltage between CN43 pin 1 (+12V) and CN43 pin 2 (GND).
      Normal voltage is between 11.5V and 12.5V.

2. 18K BTU (MH052FPEA) PCB
   1) Checking FUSE
      The fuse F701 is located on the inner side AC PCB.
   2) Checking DC Voltage
      Measure voltage between CN43 pin 1 (+12V) and CN43 pin 2 (GND) on the outer side PCB.
      Normal voltage is between 11.5V and 12.5V.
      DC voltage is supplied from CN90 on the inner AC PCB. Pin layout is as follows.
      Pin 7 : GND, Pin 8 : +5V, Pin 9 : +12V

6-3-4 Checking Power cable and Communication cable

See 6-2 "Checking and Testing operations" and installation manual.

6-3-5 Checking Temperature sensor

See 6-5 "Fault Diagnosis of Major Parts".
In case of a sensor in outdoor unit, temperature can be monitored with "VIEW MODE".
Press K4 key on the outdoor display PCB for several time to change the display to sensor temperature value.
Left 1 digit of the LED is data index and Right 2 digits are the value.

Index	Value	Remark
8	Discharge sensor temperature	The unit is degree C
9	OLP sensor temperature	
A	Condenser sensor temperature	
B	Outdoor sensor temperature	

6-3-6 Checking EEV

See 6-5 "Fault Diagnosis of Major Parts".
Current EEV step value can monitored with "VIEW MODE"
Press K4 key on the outdoor display PCB for several time to change the display to current EEV value.
Left 1 digit of the LED is data index and Right 3 digits is the value.

Index	Value	Remark
3	EEV-A step	The step value range is between zero and 480.
4	EEV-B step	
5	EEV-C step(For MH068FXEA4 / MH080FXEA4 only)	
6	EEV-D step(For MH068FXEA4 / MH080FXEA4 only)	

6-3-7 Pipe matching

See 6-2 "Checking and Testing operations".

6-3-8 Checking Motor in indoor unit

See 6-5 "Fault Diagnosis of Major Parts".

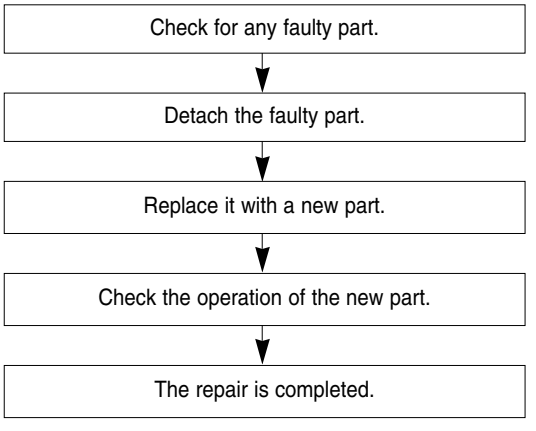
6-4 PCB Inspection

6-4-1 Cautions for Part Replacement

1. The human body carries much static electricity. Before touching a part for repair, replacement or the similar purpose, be sure to touch a grounded metallic portion by hand to let the static electricity go through the metallic portion to the earth.
   Especially when handling any micro computer or IC, carefully remove such static electricity before touching them.
2. When repairing any part on a work bench, be sure to place an insulative sheet on the bench and always keep the sheet surface neat without any metal fragments.
   If any such fragment touches a part, a secondary trouble will possibly be caused in the part.
3. Before replacing any parts, be sure to turn off the power supply. If such replacement is done with the power supply kept on, an electric shock, short circuit or destruction of a part may result.
4. During replacement or repair of a part, carefully handle it : The printed circuit board has fine lead wires (jumper wires) and glass-made parts (diode) on its substrate. So if a circuit board is roughly handled, such lead wires and parts will be easily broken or damaged by bending or shock.
5. When soldering the lead wires of any new part, be sure to polish them using an emery paper or the like before soldering them.
   Since the lead wires of any new part are covered with an oxide film, solder cannot adhere to the lead wires if not polished.
6. When soldering any part, care should be exercised not to apply any high-wattage soldering iron to the part for a long time. Some parts are of so low a heat resistance that they may be broken or have the properties changed if a soldering iron is so applied (Otherwise, the pattern may possibly be separated and raised).
7. The heat of the soldering iron should be transferred to the entire object to be soldered. If the solder pieces are not well fused due to insufficient transfer of the heat from the soldering iron, no satisfactory electrical continuity can be assured even if the soldered objects appear well connected to each other.
8. The solder used should be limited to a minimum.
   If excessive solder is used, it will cause inter-pattern contact, which may cause malfunction of the circuit.
9. Although some part of the PCB surface are coated with coating material for protection from dust and dirt, soldering is also available to the coating part. Because this coating is thin and is weak for soldering heat.
   But coating material remaining on the solder part should be cleaned up before soldering a new component to prevent the solder part from becoming bad conduction.

6-4-2 Procedure

The parts should be replaced in the following procedure.



6-5 Fault Diagnosis of Major Parts

Preparation : multimeter (AC voltage, DC voltage, Resistance)

<table>
<tr><th>Part</th><th colspan="2">Diagnosis</th></tr>
<tr><td rowspan="3">Indoor
Temperature sensor
Heat exchanger in/out sensor
Outdoor
Temperature sensor Condenser
temperature sensor</td><td colspan="2">Measure the resistance between terminals of the sensor connector housing.
In case of outdoor unit sensor, "view mode" is used for checking sensor temperature.
In case of Indoor temperature sensor, temperature is displayed on the display unit in
"Fan Mode" operation.</td></tr>
<tr><td>Normal</td><td><table>
<tr><td>Ambient temperature</td><td>15˚C</td><td>20˚C</td><td>25˚C</td><td>30˚C</td><td>25˚C</td><td>40˚C</td></tr>
<tr><td>Resistance of sensor[KΩ]</td><td>14.7</td><td>12.1</td><td>10</td><td>8.3</td><td>6.9</td><td>5.8</td></tr>
</table></td></tr>
<tr><td>Abnormal</td><td>∞, 0Ω...open or short</td></tr>
<tr><td rowspan="3">Outdoor
Discharge temperature sensor
OLP temperature sensor</td><td colspan="2">Measure the resistance between terminals of the sensor connector housing.
In case of outdoor unit sensor, "view mode" is used for checking sensor temperature.</td></tr>
<tr><td>Normal</td><td><table>
<tr><td>Ambient temperature</td><td>0˚C</td><td>10˚C</td><td>20˚C</td><td>30˚C</td><td>40˚C</td><td>50˚C</td></tr>
<tr><td>Resistance of sensor[KΩ]</td><td>553</td><td>362</td><td>242</td><td>166</td><td>165</td><td>82</td></tr>
</table></td></tr>
<tr><td>Abnormal</td><td>∞, 0Ω...open or short</td></tr>
<tr><td rowspan="3">Indoor Fan Motor</td><td colspan="2">Measure the resistance between terminals of the Motor connector housing</td></tr>
<tr><td>Normal</td><td>At the normal temperature (10˚C - 30˚C)<table>
<tr><td rowspan="2">Terminals(wire color)</td><td colspan="2">Resistance[Ω]</td><td rowspan="2">Remark</td></tr>
<tr><td>*MH✳✳✳✳✳✳✳</td><td>MH035FPEA
MH19VP2-12</td><td>MH052FPEA</td></tr>
<tr><td>Yellow-Blue</td><td>250~280</td><td>250~280</td><td>120~150</td><td>Main</td></tr>
<tr><td>Yellow-Red</td><td>420~480</td><td>330~370</td><td>120~150</td><td>Sub</td></tr>
</table>*MH020FPEA/MH023FPEA/MH026FPEA/MH18VP2-09/MH19VP2-07</td></tr>
<tr><td>Abnormal</td><td>∞, 0Ω...open or short</td></tr>
<tr><td rowspan="3">Outdoor Fan Motor</td><td colspan="2">Measure the resistance between terminals of the Motor connector housing</td></tr>
<tr><td>Normal</td><td><table>
<tr><td>Terminals(wire color)</td><td>Resistance[Ω]</td><td>Remark</td></tr>
<tr><td>Red-Blue</td><td>95~105</td><td>Main 1</td></tr>
<tr><td>Yellow-Blue</td><td>95~105</td><td>Main 2</td></tr>
<tr><td>Blue-White(run capa line)</td><td>60~75</td><td>Sub</td></tr>
<tr><td>Red-White Blue(run capa line)</td><td>0~1</td><td>Thermal fuse</td></tr>
</table></td></tr>
<tr><td>Abnormal</td><td>∞, 0Ω...open or short</td></tr>
<tr><td rowspan="3">Outdoor unit EEV
Stepping motor</td><td colspan="2">Measure the resistance between terminals of the Motor connector housing</td></tr>
<tr><td>Normal</td><td>40-50Ω Orange-Gray, Red-Gray, Yellow-Gray, Black-Gray</td></tr>
<tr><td>Abnormal</td><td>∞, 0Ω...open or short</td></tr>
<tr><td rowspan="3">Crank case heater</td><td colspan="2">Measure the resistance between terminals</td></tr>
<tr><td>Normal</td><td>1.1-1.3KΩ</td></tr>
<tr><td>Abnormal</td><td>∞, 0Ω...open or short</td></tr>
<tr><td rowspan="3">Indoor unit step motor
Flap, Front panel</td><td colspan="2">Measure the resistance between terminals of the Motor connector housing</td></tr>
<tr><td>Normal</td><td><table>
<tr><td>Motor</td><td>Resistance[Ω]</td><td>Terminals(wire color)</td></tr>
<tr><td>Flap</td><td>280~320</td><td rowspan="2">Red-Yellow, Red-Orange,
Red-Blue, Red-Pink</td></tr>
<tr><td>Front panel</td><td>110~130</td></tr>
</table></td></tr>
<tr><td>Abnormal</td><td>∞, 0Ω...open or short</td></tr>
</table>